Ebola virus vaccine receives prequalification

WHO's decision should help to control future outbreaks of Ebola virus disease. Meanwhile, clinical trials of a second vaccine are due to begin. Talha Burki reports.

On Nov 12, 2019, WHO announced the first prequalification of an Ebola vaccine. The decision will help to inform procurement processes for UN agencies and Gavi, the Vaccine Alliance. It specifies that the rVSV-ZEBOV-GP Ebola vaccine produced by Merck has met WHO standards for quality, safety, and efficacy. National regulatory bodies can choose to expedite their own approval processes on the basis of WHO's prequalification. This is particularly useful for developing countries, such as the African nations most vulnerable to Ebola, where regulatory capacities are limited. "5 years ago, we had no vaccine and no therapeutics for Ebola", stated WHO Director-General Tedros Adhanom Ghebreyesus. "With a prequalified vaccine and experimental therapeutics, Ebola is now preventable and treatable."

On the day before the WHO announcement, the European Commission granted the Merck vaccine a conditional marketing authorisation on the strength of a recommendation from the European Medicines Agency. The single-dose, reactive rVSV-ZEBOV-GP vaccine is being used in the Democratic Republic of the Congo (DRC), where there have been 3287 cases of Ebola virus disease in the ongoing epidemic. Around 250 000 people have thus far received the product, as part of a ring vaccination strategy. Efficacy stands at 97·5%, and more than 90% of those offered the vaccine have agreed to take it.

The vaccine is being deployed on a compassionate-use basis and requires informed consent from those eligible for vaccination. It is a more complicated process than would be the case for a licensed vaccine. Merck has a stockpile of 190 000 doses and has plans to make another 650 000 doses available over the next 18 months. This might not prove necessary. Over the past 3 months, there has been a steady decline in new cases of Ebola in DRC, with only 12 reported in the week up to Nov 10; at the height of the outbreak in April, 2019, there were 120 cases reported in a single week.

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Control efforts in DRC will not change as a result of the prequalification. The rVSV-ZEBOV-GP vaccine Merck submitted to WHO was produced in a different facility to the one in use in DRC. The licensed vaccine is not expected to be available until mid-2020. "It is a very important step for the future", commented Médecins Sans Frontières' Els Torreele. But she expressed concern that the product was not being licensed for those under the age of 18 years. "In DRC, we are using the vaccine on children; in the event of a new outbreak, I hope WHO makes recommendations for extending its indication", said Torreele.

"There is a lot of discussion around a global security plan, which will begin with the Merck vaccine and will have other products added as they are licensed", WHO's Mike Ryan told *The Lancet*. "We will be looking at pricing issues, how we can build up a reasonably sized stockpile, and how to set up an international coordinating mechanism for the fair and equitable distribution of the available vaccines." He stressed that there was a consensus that the most at-risk communities should be prioritised, particularly in times of epidemics. The Gavi Board will examine the options for establishing a global Ebola vaccine stockpile when it meets in December. Eight vaccines are currently in clinical trials.

The primary purpose of the stockpile will be epidemic response and protecting health and front-line workers, but as the amount of available vaccine grows, there is the potential for preventive use. Assuming there is enough vaccine, the world should be better prepared when the next Ebola epidemic strikes. In the 2014–16 west African outbreak, there were 28 616 cases of Ebola virus disease and 11 310 deaths. The presence of a vaccine probably prevented DRC from seeing similar numbers. Nonetheless, there have been more than 2100 deaths. "There is a lot more to the fight against Ebola than licensing a vaccine", points out Ryan.

Meanwhile, a clinical trial involving a preventive Ebola vaccine manufactured by Johnson & Johnson is scheduled to start in DRC in mid-November. The Ad26.ZEBOV/MVA-BN vaccine has already been tested in early stage trials on more than 6500 people. It was well tolerated and showed promising immunogenicity. In DRC, it will be tested in areas considered to be vulnerable to the disease, but where there is no active transmission, based on epidemiological data and logistical and security considerations. The vaccine requires two doses, 56 days apart. This could be problematic. North Kivu and Ituri, the DRC provinces most affected by Ebola, have highly mobile populations and a host of violent militias. The trial might not gather efficacy data, given the stage of the outbreak, but it ought to be able to amass safety data as well as evaluate the feasibility of the two-dose schedule.

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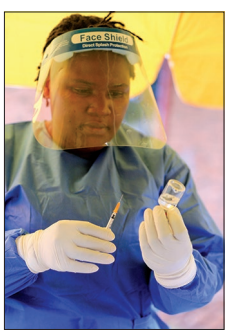

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